Auke Bay

Corridor Study

Preliminary Purpose and Need Statement

I. Introduction

The area being studied is the Glacier Highway in the Auke Bay Corridor. The Auke Bay Corridor is the area of the west Mendenhall Valley, the north portion of Mendenhall Peninsula, and the Auke Bay area out to the ferry terminal. It encompasses development along Glacier Highway, the University of Alaska Southeast (UAS) campus, and commercial and residential areas around Auke Bay, including the harbor and marinas.

Glacier Highway is the major transportation route between the Mendenhall Valley, Auke Bay and the ferry terminal. Mendenhall Loop Road (Back Loop Road) serves as an alternate route between the Mendenhall Valley and Auke Bay.

II. Purpose

The purpose of the Auke Bay Corridor project is to improve surface transportation along the Glacier Highway corridor, between Fritz Cove Road and the Auke Bay Ferry Terminal. The improvement should provide sufficient capacity to safely handle the traffic demands for a 20-year design life.

III. Need for the Action

The following statements highlight the needs for the project. A more detailed discussion of each statement follows.

1) Improve the safety of identified intersections and segments

2) Improve the substandard geometric design deficiencies along the existing road alignment

3) Provide more reliable, efficient, convenient, and cost effective movement throughout the corridor

4) Enhance non-motorized access on, off and across the corridor

Improve the safety of identified intersections and segments

The collision severity in Auke Bay Corridor is higher than the statewide average. Furthermore, statistical significance tests indicate that the minor injury collisions are much higher than average. The following trends were identified and warrant attention.

- The Mendenhall Loop Road and Glacier Highway intersection system has a high collision rate, with a significant rear-end collision frequency. Figure 2 shows areas of conflicts between turning traffic and through traffic in the Wye intersection area.

- The Auke Nu Drive to Ferry Terminal segment on Glacier Highway has a high collision rate. Contributing factors include road surface conditions and speed.

- Mendenhall Loop Road, between University Drive and the UAS entrance, has a high collision rate. Of particular concern at this location were two pedestrian collisions – one of which resulted in a fatality. Figure 1 presents the view approaching the intersection of the UAS entrance and Mendenhall Loop Road. Figure 3 presents areas of heavy pedestrian traffic and sidewalks in the Auke Bay area.

Figure 1

- A conflict analysis conducted at Fritz Cove Road and Glacier Highway shows a high number of conflicts between outbound right-turns into UAS and through vehicles. Figure 4 demonstrates these areas of conflicts.

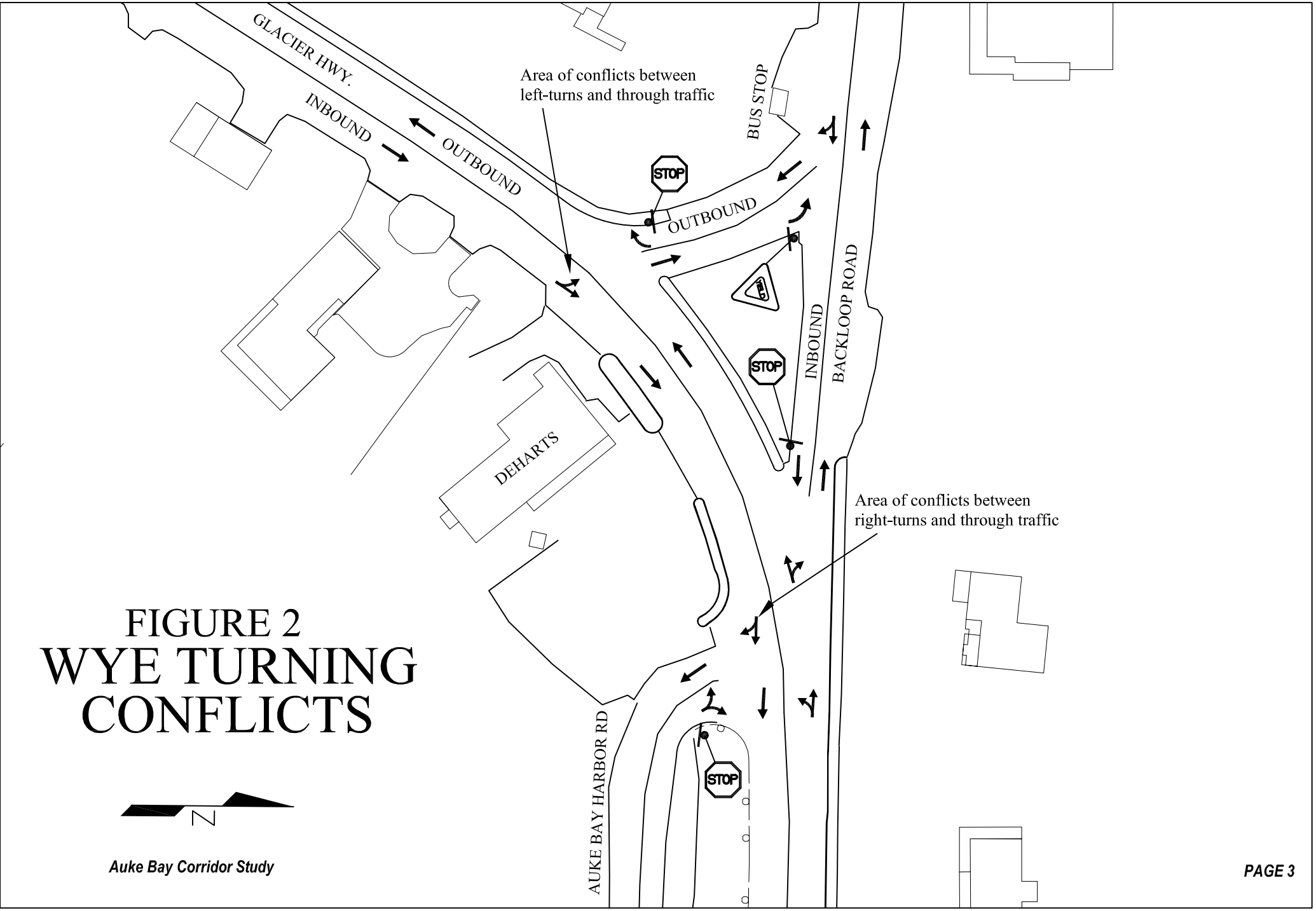


FIGURE 2
WYE TURNING CONFLICTS

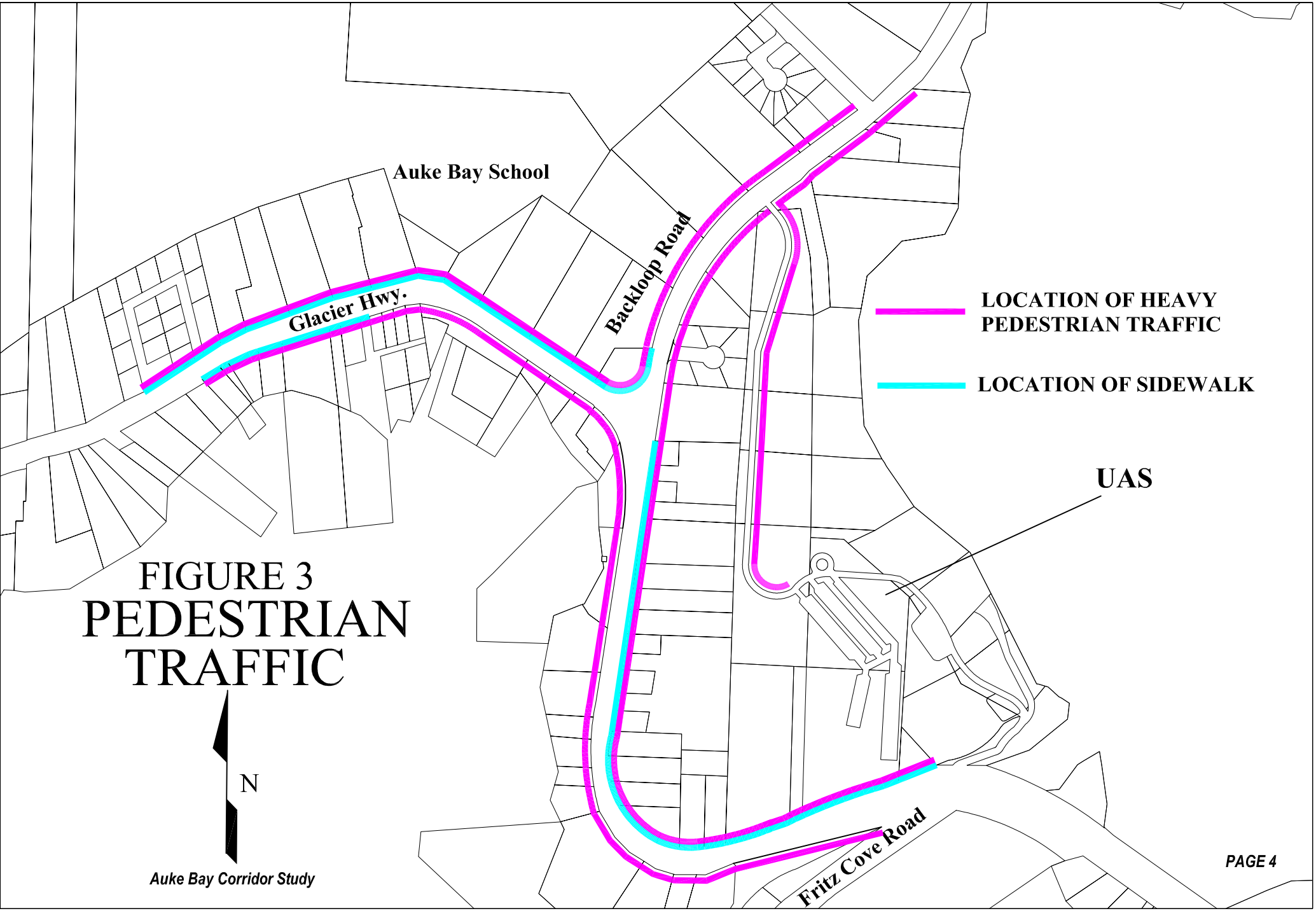


FIGURE 3
PEDESTRIAN TRAFFIC

Auke Bay Corridor Study

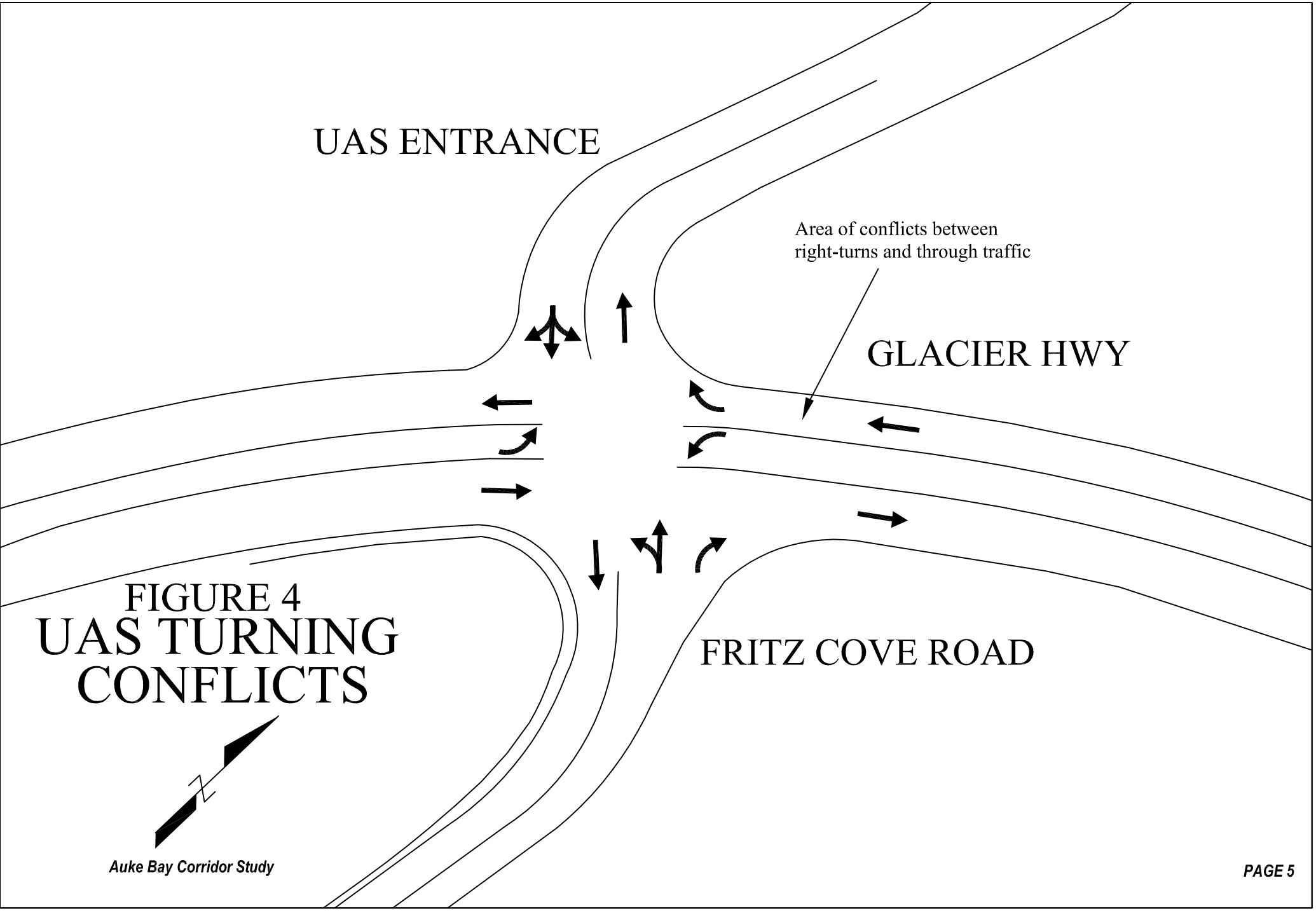


FIGURE 4
UAS TURNING CONFLICTS

Improve the substandard geometric design deficiencies along the existing road alignment

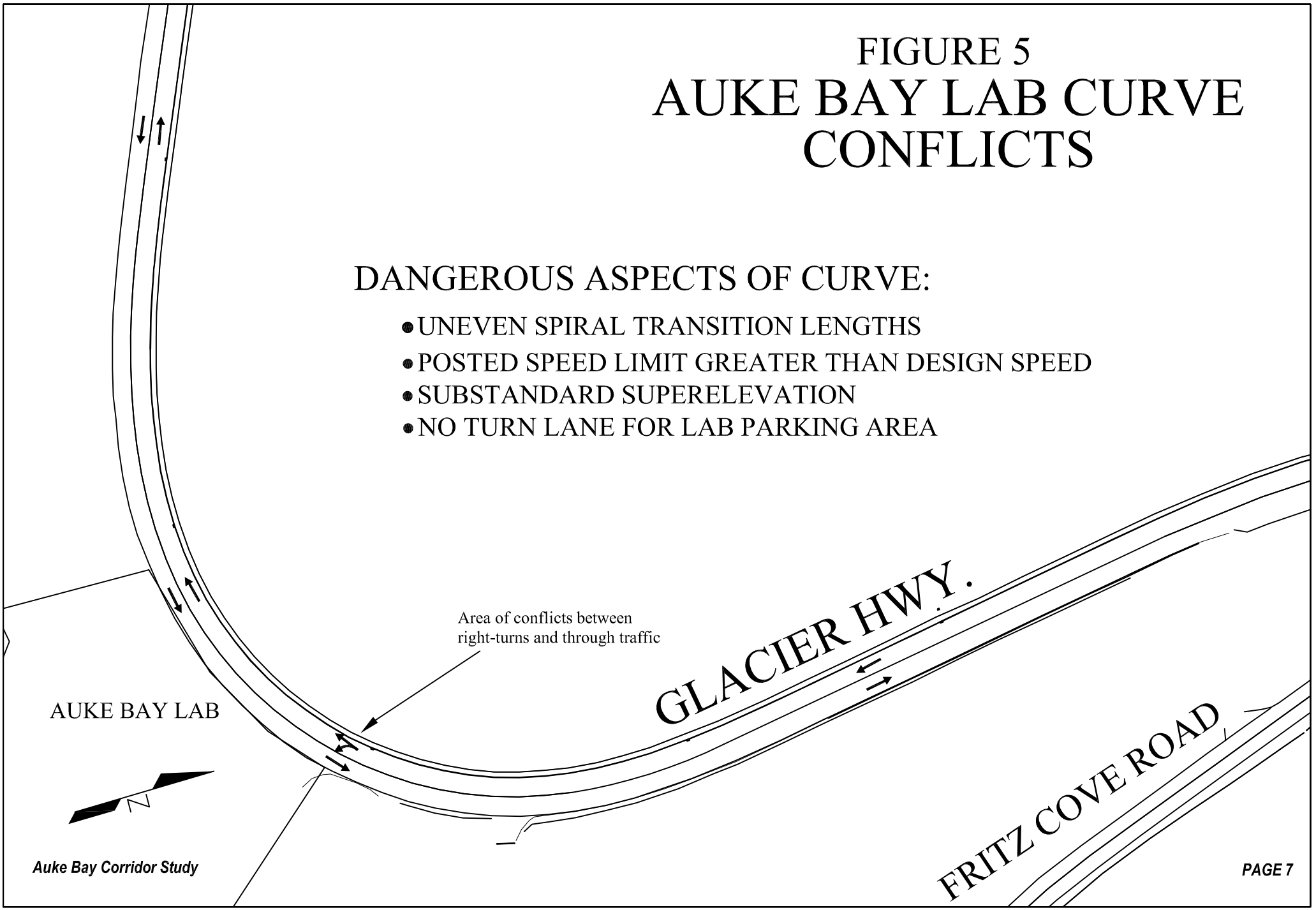
- Four horizontal curves on Glacier Highway have radii that are less than the minimum radii for both the posted and design speeds.

- The existing alignment employs spiral transition curves, reverse curves and compound curves – all features that may be unexpected by drivers. Figure 5 demonstrates the dangerous features of the curve near the Auke Bay Lab.

FIGURE 5
AUKE BAY LAB CURVE CONFLICTS

DANGEROUS ASPECTS OF CURVE:

- UNEVEN SPIRAL TRANSITION LENGTHS
- POSTED SPEED LIMIT GREATER THAN DESIGN SPEED
- SUBSTANDARD SUPERELEVATION
- NO TURN LANE FOR LAB PARKING AREA



- All intersections meet the minimum standards for sight distance, but several intersections provide less than desirable standards. Figure 6 demonstrates the view looking inbound towards Juneau from the Auke Bay Lab. Figure 7 demonstrates the view looking inbound toward Juneau from Auke Bay Harbor Road.

Figure 6

Figure 7

- We observed potential sight distance problems at the DeHart's exit due to parked vehicles. Figure 8 shows a delivery truck at DeHart's temporarily blocking the view from the parking lot exit. Figure 9 shows parking areas available that would obstruct the view of traffic inbound to Juneau from exiting cars.

Figure 8

Figure 9

- The Back Loop Road intersection with Glacier Highway has a less than desirable layout. Skew angles on both right and left turn lanes impact the driver's ability to take full advantage of the available sight distance. Figure 10 is the view from Mendenhall Loop Road approaching the intersection with Glacier Highway.

Figure 10

- Auke Nu Drive also has an undesirable skew angle.

Provide more reliable, efficient, convenient, and cost effective movement throughout the corridor

- By 2009 Fritz Cove Road and UAS South Entrance will decline to an evening peak hour Level of Service (LOS) F. LOS is a measurement of how well an intersection accommodates vehicles within an acceptable range of delay. LOS A represents the best service and F is the worst.

- By 2019 the inbound approach of Back Loop Road to Glacier Highway will decline to an evening peak hour LOS F.

- By 2029 the Auke Bay Harbor Road approach will decline to an evening peak hour LOS F.

- By 2019 Glacier Highway will begin to experience unacceptable delays and long queues.

- By 2029 long queues develop behind turning cars and inbound traffic has an average speed of 17 to 19 mph in the peak evening travel time.

Enhance non-motorized access on, off and across the corridor

- There are two schools (Auke Bay Elementary School and the University of Alaska Southeast) located in the project corridor. Elementary students walk and ride their bicycles to school. University students walk to and from campus housing, classes and work. Parents, students and school officials have contacted the Department to express their concerns about the difficulty crossing

Glacier Highway. Figure 11 shows the areas of social and economic importance in the Auke Bay area.

- The corridor is a popular boating and recreation center. Bicyclists and pedestrians commute to school and work, and many others walk and bike for recreation. Many other pedestrians in the area are marina users who walk from remote parking areas to the harbor.

IV. Compatibility with Existing Plans

According to the **CBJ Areawide Transportation Plan of July, 2001** the forecast transportation deficiencies relating to Auke Bay are that the Glacier Highway is the only arterial through the area as well as the "main street" of the sub-area. Within a relatively congested area, there is a significant difference in travel speeds between motorized vehicles making local or through trips and pedestrians and bicyclists traveling along or across the highway. This area must be designed to adequately serve pedestrians, bicyclists, and local vehicle trips and through vehicle trips.

Further the plan suggests that improvements for Auke Bay could be traffic calming and the construction of a roundabout or traffic signal at the Back Loop Road intersection. This would integrate the intersection with main street/traffic calming treatments through Auke Bay. Traffic calming treatments used may include landscaping, sidewalks on both sides of the street, access management, pedestrian level lighting, bus pullout/shelter, curb extensions and bicycle lanes. A roundabout could serve as a gateway treatment and a traffic-calming device in the school area. The plan also suggests including pedestrian crossing amenities between University of Alaska campus facilities that are separated by the highway.

The **CBJ 1995 Update to Comprehensive Plan** suggests undertaking transportation improvements within Auke Bay to accommodate additional demand resulting from the construction of the ferry terminal, boat marina, and other facilities, as well as the expansion of the University of Alaska. The plan suggests that the proposed corridor should follow the division between low and medium density residential uses where possible.

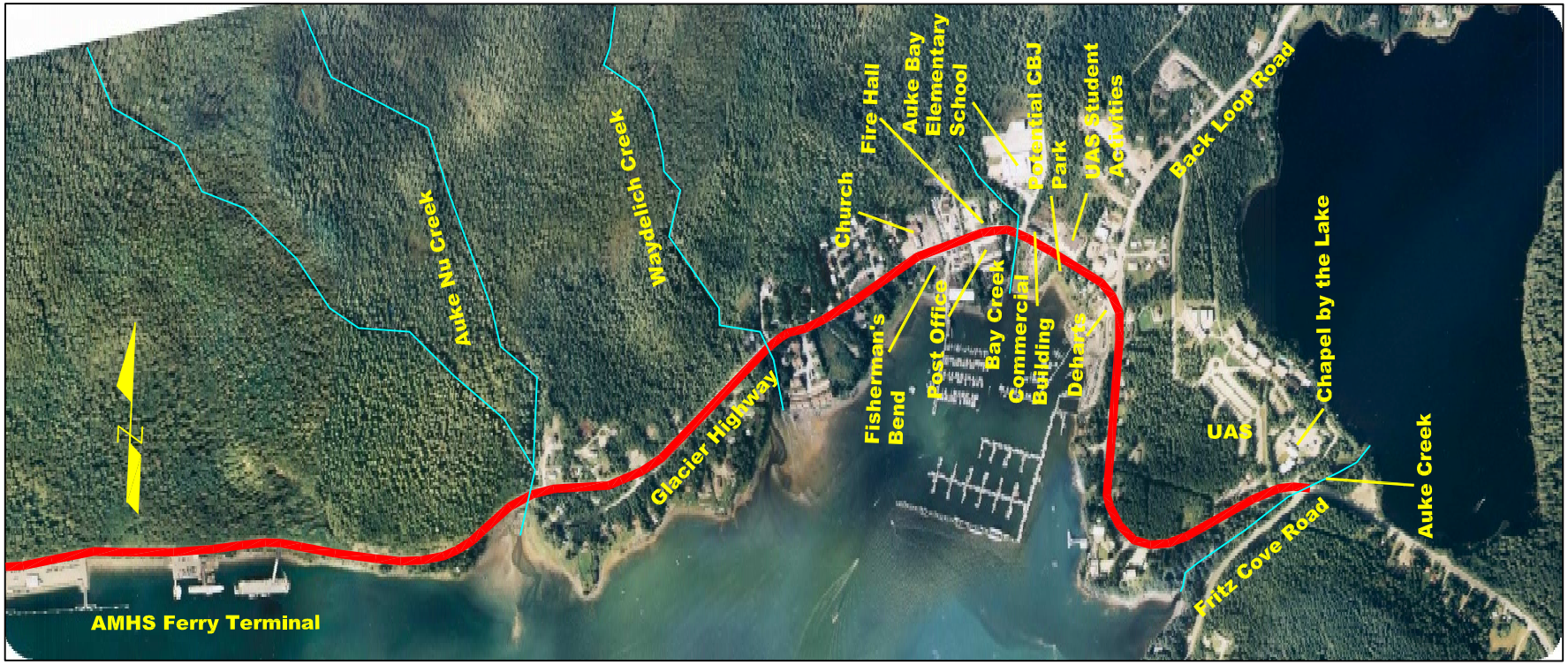
The plan also suggests evaluating a corridor realignment of Glacier Highway from its intersection with UAS to Auke Bay and encouraging a new driveway for UAS that avoids the Auke Lake Wayside and minimizes adverse traffic impacts.

Finally the plan suggest requiring sidewalks and bicycle paths or lanes along existing or newly constructed arterial and collector streets, where appropriate, to provide safe and efficient access and recreation and to reduce pedestrian/automobile conflicts.

The **UAS Final Draft Executive Summary Campus Facilities Master Plan, February 2002** presents three site concept options. The recommended plan would establish the north entrance off Back Loop Road as the only public entrance to the core area of the

FIGURE 11

Auke Bay Corridor Study
Locations of Social and Economic Importance



campus. The existing entrance from Glacier Highway would be used for access to Chapel by the Lake property and emergency/service access for the campus.

According to the December 1993 **Department of Natural Resources, Juneau State Land Plan**, Auke Lake will be managed to support the high public values of the lake including research, water quality, habitat restoration, fisheries management, summer and winter recreation, and landings by aircraft.

According to the July 1996**, City and Borough of Juneau, Juneau Parks and Recreation Comprehensive Plan**, a master plan should be developed for the area around Auke Lake. This report also recommends a trail corridor between UAS student housing and Auke Bay School to be considered for bicycle and skiing use. Furthermore, the report recommends the reservation of a trail corridor between the Auke Bay Elementary School and the Spaulding Meadows trail so Auke Bay school parking lot could provide the necessary overflow parking for the trailhead.

According to **Steve Gilbertson, CBJ Lands and Resources Manager**, there is a proposed subdivision in the Pederson Hill area. The proposal calls for the development of 350 lots. There are also an additional 330 lots on the Mendenhall Peninsula that could be developed.